

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 01107.00113	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 01/08886	International filing date (day/month/year) 21/03/2001	(Earliest) Priority Date (day/month/year) 21/03/2000
Applicant THE JOHNS UNIVERSITY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. **Certain claims were found unsearchable** (See Box I).

3. **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.

because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

1a

None of the figures.

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C07K7/08 A61K47/48 A61K38/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data, MEDLINE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>RICOUART A ET AL: "DESIGN OF POTENT PROTEIN KINASE INHIBITORS USING THE BISUBSTRATE APPROACH" JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, US, vol. 34, no. 1, 1991, pages 73-78, XP002918324 ISSN: 0022-2623 See especially page 73, column 1;page 74, column 1</p> <p>---</p> <p style="text-align: center;">-/--</p>	1-68

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

5. February 2002

Date of mailing of the international search report

27/02/2002

Name and mailing address of the ISA

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Authorized officer

Groenendijk, M

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>HUBBARD S R: "Crystal structure of the activated insulin receptor tyrosine kinase in complex with peptide substrate and ATP analog" EMBO JOURNAL, OXFORD UNIVERSITY PRESS, SURREY, GB, vol. 16, no. 18, 1997, pages 5572-5581, XP002088043 ISSN: 0261-4189 cited in the application The whole document; see especially page 5578, column 2 ---</p>	1-68
P, X	<p>MILLER: "Double trouble" NATURE STRUCTURAL BIOLOGY, vol. 8, no. 1, January 2001 (2001-01), pages 16-18, XP001053333 the whole document ---</p>	1-68
P, X	<p>PARANG E.A.: "Mechanism-based design of a protein kinase inhibitor" NATURE STRUCTURAL BIOLOGY, vol. 8, no. 1, January 2001 (2001-01), pages 37-41, XP001053332 the whole document ---</p>	1-68
Y	<p>MEDZIHRADSZKY DENES ET AL: "Solid-phase synthesis of adenosine phosphopeptides as potential bisubstrate inhibitors of protein kinases" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC, US, vol. 116, no. 21, 1994, pages 9413-9419, XP002150234 ISSN: 0002-7863 cited in the application the whole document ---</p>	30-57, 59-68
A	<p>ROSSE, GERARD ET AL: "Synthesis of modified tripeptides and tetrapeptides as potential bisubstrate inhibitors of the epidermal growth factor receptor protein tyrosine kinase" HELV. CHIM. ACTA (1997), 80(3), 653-670 , XP002188862 See especially page 654 ---</p>	1-68
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KIM E.A.: "Kinetic analysis of a protein tyrosine kinase reaction transition state in the forward and reverse directions" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 120, no. 28, 22 July 1998 (1998-07-22), pages 6851-6858, XP002188863 DC US the whole document -----	1-68

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-4,8-19,23-33,37-47,51-68

Present claims 1,16,30,44 and 60 relate to an extremely large number of possible compounds (and their use). Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Moreover the majority of said compounds is only defined by a minimum length of the tether, lacking any other structural properties. Hence said claims also lack clarity within the meaning of Article 6 PCT to such an extent as to render a meaningful search of the whole of the claimed scope of said claims impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds defined in the claims 5-7 and 34-36 and their use and also for the general concept underlying the claims 1,16,30,44, and 60.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/0886

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 16-29 and 44-57 encompass or are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. Claims Nos.: 1-4, 8-19, 23-33, 37-47, 51-68
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.